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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/367,543	10/06/1999	ALEXANDR ALEXANDROVICH MIROSHIN	8472-018	4468

7590

08/20/2003

PENNIE & EDMONDS  
1667 K STREET NW  
WASHINGTON, DC 20006

EXAMINER

HON, SOW FUN

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/367,543

Applicant(s)

MIROSHIN ET AL.

Examiner

Sow-Fun Hon

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1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 97,135 and 172 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 97,135 and 172 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/23/03 has been entered.

### ***Pending Claims***

2. The amendments to claims 130-134 have not been entered since said claims have been cancelled in Paper # 18 (filed 11/12/02). The presently pending claims are claims 97, 135, 172.

### ***Withdrawn Rejections***

3. The 35 U.S.C. 112,2<sup>nd</sup> paragraph and 103(a) rejections in Paper # 19 (mailed 01/23/03) have been withdrawn due to Applicant's amendment in Paper # 23 (filed 05/23/03).

### ***New Rejections***

#### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 97, 135, 172 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gvon et al. '296) in view of Okuzaki et al. and Ouderkirk et al. (WO 95/17691).

Gvon et al. has a polarizer comprising a layer which is anisotropically absorbing (polarizing coating with high dichroic ratio) (column 10, lines 1-35) and birefringent (high optical anisotropy) (column 6, lines 50-65). The thickness of the birefringent and anisotropically absorbing layer (polarizing coating) ranges from 100 to 1500 nm (0.1 to 1.5 micrometer) (column 8, lines 45-60).

Gvon et al. teaches that the birefringent and anisotropically absorbing layer (polarizing coating) contains an organic salt of a dichroic anionic dye of general formula {Chromogen}- $(XO^{\ominus}M^{\oplus})_n$  (dichroic plurality of supramolecular complexes formed from one or more of the organic dyestuffs of the formula:  $(SO_3M)_n$  wherein M is  $M^{\oplus}$  (cation) so that  $SO_3^{\ominus}$  has to be the counter anion  $XO^{\ominus}$ ) (column 5, lines 45-68 and column 15, lines 1-68). The dyestuffs are treated with tetraalkylammonium salts (for example, benzyl-dimethyl-cetylammmonium chloride) (column 9, lines 10-15) wherein the tetraalkylammonium cations are organic cations. (Applicant has defined organic salt as having an organic cation  $M^{\oplus}$ ).

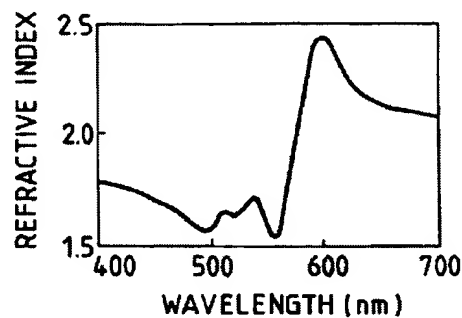
The refractive index of the birefringent and anisotropically absorbing dye layer of Gvon et al. increases as the polarizable light wavelength increases at least for a certain range of wavelengths as evidenced by Okuzaki et al. The maximum absorption wavelengths of the dyes of Gvon et al. range from 400 to 700 nm (column 14, lines 50-70 and column 15, lines 1-30).

Okuzaki et al. teaches that it is well known in the art that a dye (material such as a coloring matter) which has absorption in a specified wavelength range (region) displays refractive index increase (disperses abnormally in refractive index) in the specified wavelength range of absorption (at its absorption region) (column 5, lines 25-60). The refractive index increases between 560 nm and 600 nm in some form of proportionality (becomes large, high

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refractive index in region of long wavelength and low refractive index in region of shorter wavelength) (column 7, lines 1-25) with a maximal value of at least 1.9 (2.4) as can be seen on the next page.

*FIG. 7(b)*



Gvon et al. fails to teach that the thickness of the birefringent and anisotropically absorbing dye layer is such that an output of the polarizer coincides with an interference extremum of a linearly-polarized light component.

Ouderkirk et al. teaches that if the layers have an optical thickness less than a wavelength of light, then constructive interference can be exploited to improve the optical performance of the polarizer at the selected wavelength (column 6, lines 1-10).

Since Ouderkirk et al. and Gvon et al. are both directed to an optical polarizer, they are analogous art.

Since Gvon et al. teaches that the thickness of the birefringent and anisotropically absorbing dye layer ranges from 100 to 1500 nm, wherein the maximum absorption wavelengths of the dyes range from 400 to 700 nm, the thickness of the layer can be less than the selected wavelength of light, and thus it would have been obvious to one of ordinary skill in the art to have used a thickness less than the selected wavelength of light as taught by Ouderkirk et al. for

the thickness of the polarizing birefringent and anisotropically absorbing dye layer such that an output of the polarizer of Gvon et al. coincides with an interference extremum of a linearly-polarized light component.

***Response to Arguments***

6. Applicant's arguments with respect to claims 97, 135 have been considered but are moot in view of the new ground(s) of rejection. However, the arguments against the valid use of Gvon et al. as a primary reference are addressed below in order to advance prosecution.

7. Applicant argues that Gvon et al. does not mention birefringence with respect to its polarizing coating. Applicant is respectfully directed to the definition of birefringence in the Polymer Science Dictionary (page 43) where optical anisotropy is taught to be one of its synonyms.

8. Applicant argues that the data provided in the declaration in Paper # 24 (filed 05/23/03) indicate that the presence of a dye taught by Okuzaki is not sufficient for attaining abnormal dispersion in a dyed film or in a dye layer. Applicant is respectfully apprised that the maximum absorbance of dye # 1 occurs at roughly 0.3 micrometers or 300 nm, but the refractive index versus wavelength graph only begins at 0.4 micrometers and ends at 0.75 micrometers, and thus does not show the refractive index versus wavelength behavior around the wavelength of maximum absorbance of dye # 1. On the other hand, the refractive index versus wavelength graph for dye # 2 shows the behavior around the wavelength of maximum absorbance of dye # 2 which is around 0.42 micrometer. The declaration is thus deficient.

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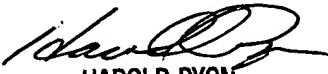
8. Applicant is also respectfully apprised that the recitation of "a certain range of wavelengths" includes 300 nm (0.3 micrometer) and 301 nm (0.301 micrometer) where the difference is only 1 nm (0.001 micrometer).
9. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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Sow-Fun Hon  
08/08/03

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772 8/8/03